

Warm Up

Can you find the equation of this graph??

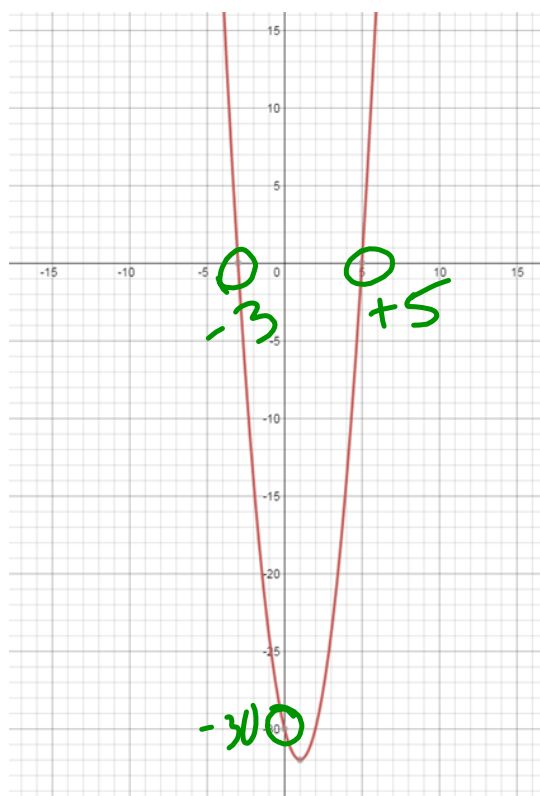
$$y = a(x - 2)^2 - 2$$

$$y = (x + 3)(x - 5)$$

$$y = (0 + 3)(0 - 5)$$

$$= (3)(-5)$$

$$= -15$$



The Quadratic Formula and THE DISCRIMINANT			
Equation	$x^2+3x-6$	$x^2+3x+5$	$x^2-6x+9$
Values of ...	$a=1$ $b=3$ $c=-6$	$a=1$ $b=3$ $c=5$	$a=1$ $b=-6$ $c=9$
a, b, c Graph			
Number of Roots	2	0	1
Value of discriminant $b^2-4ac$	$b^2-4ac$ $(3)^2-4(1)(-6)$ $9+24$ $33$	$b^2-4ac$ $(3)^2-4(1)(5)$ $9-20$ $-11$	$b^2-4ac$ $(-6)^2-4(1)(9)$ $36-36$ $0$
Summary:	POSITIVE 2 roots	NEGATIVE No roots	Zero 1 root

$$7) \quad C^2 + 7C + 16 = 0$$

$$a=1 \quad b=7 \quad c=16$$

$$C = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$= \frac{-7 \pm \sqrt{49 - 4(16)}}{2}$$

$$= \frac{-7 \pm \sqrt{49 - 64}}{2}$$

NEG  
NO roots!  
No soln

How many roots?  
 $b^2 - 4ac$

$$\frac{8}{1} \left( \frac{3}{4} x \right) + \frac{8}{1} \left( \frac{3}{8} \right) = 0$$

$$\frac{8}{4} (3x) + \frac{8}{8} (3) = 0$$

$$2(3x) + 1(3) = 0$$

$$6x + 3 = 0$$

$$\frac{35}{5} \left( \frac{3}{5} x^2 \right) + \frac{35}{7} \left( \frac{2}{7} x \right) - \frac{35}{5} (3) = 0$$

$$\frac{35}{5} (3x^2) + \frac{35}{7} (2x) - \frac{35}{5} (3) = \frac{35}{5} (0)$$

$$\frac{105}{5} x^2$$